



Mayor Michael B. Coleman

# **City of Columbus Green Fleet Action Plan**

Issued  
January 1, 2008

***2010 Year-end Update***

Department of Finance and Management  
Division of Fleet Management

**City of Columbus**  
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## **Section 1: Introduction**

When Mayor Coleman announced the “Get Green Columbus” initiative in January 2005, one of the key policy strategies outlined in his Green Memo was to:

*“Stop unnecessary vehicle emissions by conducting a review of our City’s on-road and off-road vehicle operation and maintenance procedures to reduce vehicle emissions...”*

Other key policy strategies relating to “greening” our City’s fleet were outlined in the memo, several of which the Division of Fleet Management has since implemented, including developing and implementing an anti-idling policy, seeking and receiving grant funding to retrofit vehicles with oxidation converters and engine hydraulic and coolant heaters, and increasing our use of environmentally friendly bio fuels.

Yet, the need to address outdoor air quality is as great as ever:

- In 2004, U.S. EPA officially designated six central Ohio counties as non-attainment for failing to meet federal standards for either/both ozone and PM 2.5 pollution. Columbus is located in three of those counties.
- Air pollution contributes to asthma prevalence and increases asthma episodes.
- According to a news release from the EPA, the average refuse truck emits approximately eight tons of air pollutants per year through exhaust emissions.
- Retrofitting refuse trucks with oxidation converters will cut particulate matter by 30%, hydrocarbons and toxics by 50% and nitrogen oxides by 40%.

The City of Columbus is establishing this Green Fleet Action Plan to address the management, operation, and procurement of fleet vehicles under the control of the City in order to improve the energy efficiency and reduce emissions of its fleet. The City of Columbus recognizes that energy use associated with the operation of its vehicle fleet is one of the many factors impacting local air quality and the greenhouse gas emissions that contribute to global climate change. Mayor Coleman is directing all departments and divisions to take specific steps toward improving the energy efficiency of its fleets and reducing emissions from fleet operations, especially heavy duty vehicles. Improving the energy efficiency of the City fleet will also result in significant monetary savings in the long run.

## Section 2: Definitions

**“Light-duty vehicles”** any motor vehicle with a gross vehicle weight less than 14,000 pounds and includes all passenger vehicles (autos), pick-up trucks, vans, sport utility vehicles (SUV) and motorcycles

**“Medium-duty vehicles”** any vehicle with a gross vehicle weight between 14,001 and 26,000 pounds

**“Heavy-duty trucks”** any motor vehicle with a gross vehicle weight greater than 26,000 pounds and includes all Fire apparatus, dump trucks, snow plows, street sweepers and Refuse trucks

**“Off-Road Construction”** any vehicle not licensed for on-road use that is used primarily for construction purposes (backhoes, loaders, mixers, etc.)

**“Off-Road Other”** are smaller, motorized equipment (mowers, weed eaters, air compressors, etc.)

**“Alternative fuel”** any fuel that is substantially non-petroleum in nature, is not gasoline or diesel, and is defined as an alternative fuel by the U.S. Department of Energy

**“Green Vehicle”** refers to any vehicle that employs environmentally friendly technology to reduce either fuel consumption or emissions (i.e. hybrid, flex-fuel, CNG, equipped with after-treatment device, anti-idling device, auxiliary heating device, etc.)

**“Diesel Oxidation Catalyst (DOC)”** is a device with a honeycomb-like structure that oxidizes pollutants in the exhaust stream, thereby reducing harmful emissions.

**“Diesel Particulate Filter (DPF)”** is a ceramic device that collects the particulate matter in the exhaust stream and breaks it down into less harmful components.

**“Biodiesel”** fuel is a clean, renewable fuel, made by refining any fat or oil such as soybean oil. It is typically blended with petroleum diesel to create a biodiesel blend.

**“Flex fuel”** refers to a vehicle that can use either standard unleaded gasoline or E85, a blend of 15% gasoline and 85% ethanol. E85 comes from renewable, American resources like corn.

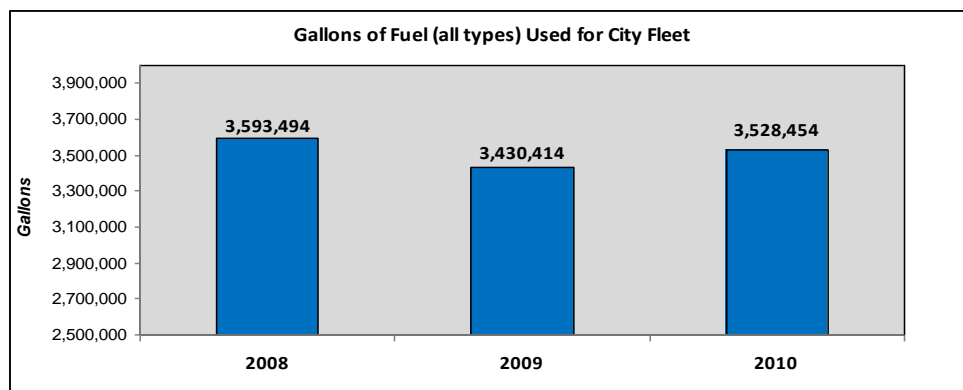
## Section 3: Fleet Inventory

The City of Columbus Fleet Management Division maintains over 5,600 pieces of equipment, approximately 3000 of which are on-road vehicles, i.e., cars, trucks, SUVs, etc. and approximately 2600 are off-road, e.g. construction equipment.

## Section 4: Goals of the Action Plan

The goals of this action plan are to reduce fleet fuel use and reduce fleet vehicle emissions. The City will manage and operate its fleet so that our vehicles are the most fuel efficient, low emission vehicles possible that still meet the various operational needs of the City. The following are proposed to measure the City's performance toward meeting these goals\*:

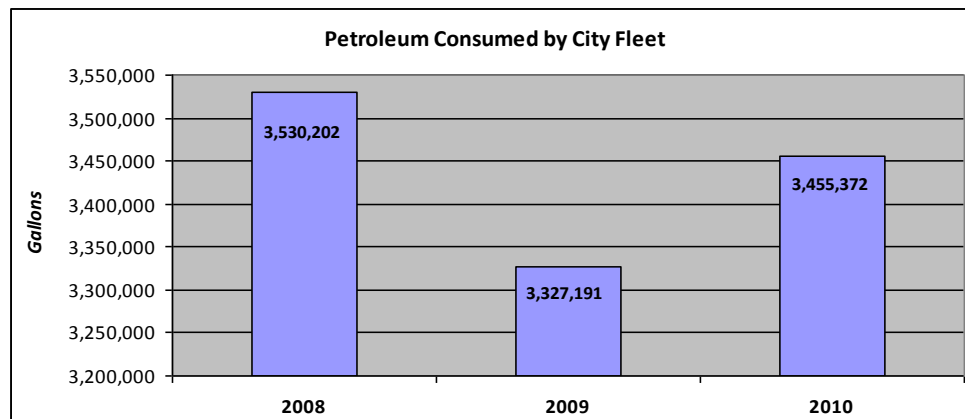
- **Measure: Total annual City fuel use (includes *all* fuel used- bio, ethanol, petroleum, CNG, etc.)**
  - **Target: Reduce overall City fuel use by 3% by 2010**
    - **2010 year-end update:** The City used 65,042 less gallons of fuel in 2010 than it did in our baseline year of 2008 (3,528,452 gallons vs. 3,593,494 gallons). This represents a **1.8% reduction** in overall fuel use since this plan was implemented. This reduction can be attributed to an overall reduction in fleet size, right-sizing of vehicles, anti-idling initiatives and the purchase of “green” vehicles. Fuel use did increase however from 2009 to 2010 by approximately 98,000 gallons or 2.8%. Continuing to replace older vehicles with more fuel efficient ones is the quickest strategy for reducing our overall fuel use. Budget constraints over the past 3 years severely limited the amount of new, fuel efficient vehicles the City was able to purchase, thus impacting our ability to reduce our fuel consumption to our original target level. The installation of GPS systems on all on-road vehicles in 2011 will allow for a detailed analysis of fuel use, giving city leaders the ability to accurately determine the reasons for fuel consumption increases and decreases.
    - In 2009, the City used 163,080 less gallons of fuel that it did in 2008 (3,430,414 gallons vs. 3,593,494 gallons in 2008)- a **4.5% reduction** in total fuel use over 2008.



- **Measure: Total annual City petroleum use (includes *only* petroleum fuel- does not include “green” fuels - bio fuels, ethanol, CNG, etc.)**
  - **Target: Reduce annual petroleum use by 12% by the end of 2010**
    - **2010 year-end update:** In 2010, the City used 3,455,372 gallons of petroleum fuel. Using 2008 as our baseline when 3,530,202 gallons of

petroleum were consumed, the City has reduced its petroleum use by **2.1%** since this plan was implemented. In 2009 the reduction in petroleum fuel was greater- a **6%** reduction was realized over 2008. Reductions in petroleum are due mainly to the increased use of “green” fuel- mostly biodiesel, as well as E85 and CNG. In 2010 the federal tax credit for biodiesel was removed, making the purchase of biodiesel much more expensive. As a result, the City reduced its purchase of biodiesel to either B5 or B2, instead of the B5 and B20 that was purchased in 2009. This reduction in the percentage of biodiesel purchased greatly affected our ability to reduce our petroleum usage.

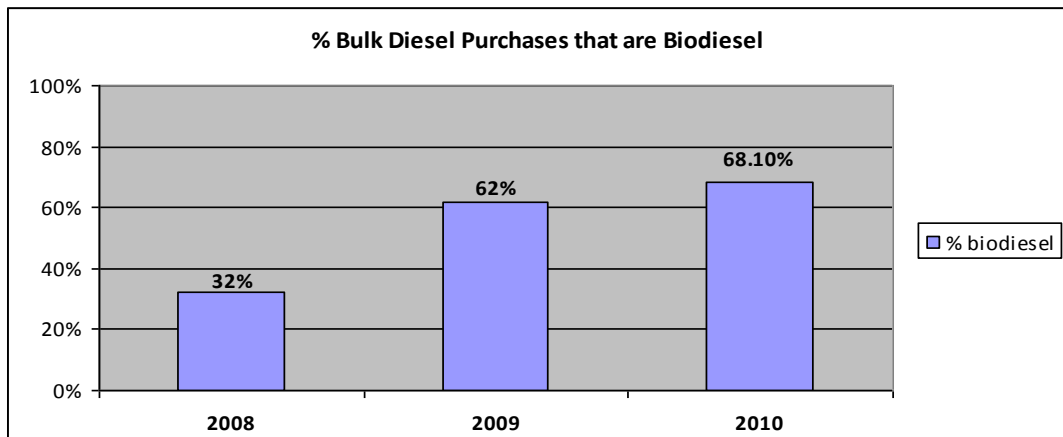
- In 2009 a reduction in petroleum fuel of **6%** was realized over 2008. Reductions in petroleum are due mainly to the increased use of “green” fuels- mostly biodiesel, as well as E85 and CNG.



- **Measure: Percentage of City bulk diesel purchases that are a biodiesel blend (at least B2 or B20 depending on season)**
  - **Target: 100% by end of 2008**
    - **2008 Year-end update:** All diesel fuel tanks must be cleaned before diesel fuel can be switched to biodiesel. Due to funding constraints and legal issues, cleaning of all tanks has not been possible in the time frame originally planned. Currently, 9 city fueling sites (out of 14 major fueling sites) are using biodiesel. In 2008, the City purchased 425,315 gallons of biodiesel, accounting for approximately **32%** of all bulk diesel purchases. Original target of 100% was not met due to funding and legal constraints mentioned above. New targets have been set below based on current budget estimates:
      - **50% by end of 2009 – met (62%)**
      - **65% by end of 2010 – met (68.1%)**
      - **75% by end of 2011**

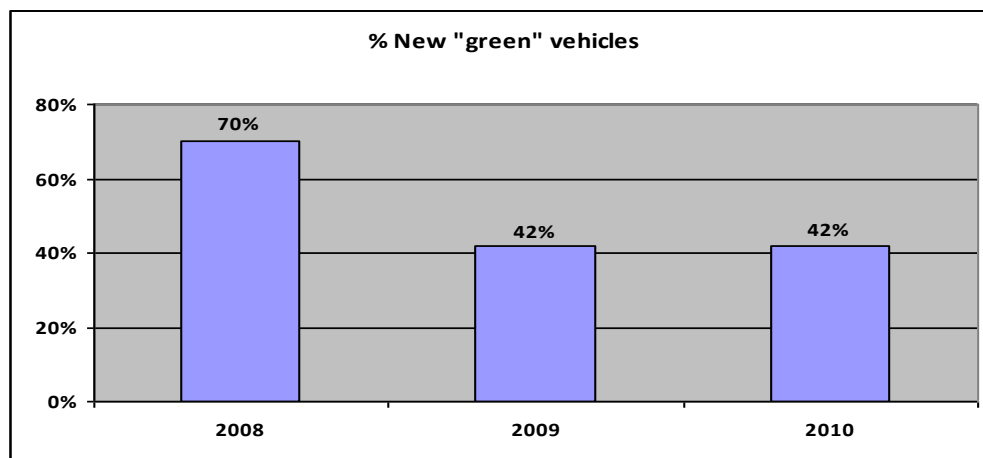
**2010 year-end update:** In 2010, the city used 945,167 gallons of biodiesel, resulting in **68.1%** of all bulk diesel purchases being biodiesel. (please see pg. 10 for more detail regarding biodiesel). The breakdown by biodiesel blend used is as follows:

- B2: 180,008 gallons
- B5: 557,004 gallons
- B20: 208,145 gallons



- **Measure:** Percentage of eligible pre-2002 on-road diesel vehicles retrofitted with at least DOC technology, with DPF technology being considered for high fuel usage vehicles
  - **Target:** 50% by end of 2009
    - **2009 Year-end update:** In 2009, approximately **42%** (50 out of 119) of the identified vehicles were retrofitted with either DOCs or DPFs. Retrofits are funded through federal grants. Delays in receiving federal funding caused us to slightly miss our target of 50% installations for 2009.
  - **Target:** 100% by end of 2010
    - **2010 year-end update:** **100% (115)** of all eligible on-road City vehicles have been retrofitted with either a DOC or DPF. A total of 107 DOCs and eight (8) DPFs were installed using federal grants. This project is now complete.
- **Measure:** Percentage of eligible vehicles fitted with engine coolant and hydraulic oil heaters or engine coolant heaters
  - **Target:** 100% by end of 2009
    - **2010 year-end update:** **100% (43)** of all identified, eligible vehicles have been fitted with either engine coolant or hydraulic oil heaters using federal grants. This project is now complete.

- **Measure:** Percentage of new on-road vehicles and/or equipment purchased each year that are considered green
  - **Target: 25% by end of 2008**
    - **2008 Year-end update:** In 2008, the City purchased 388 new on-road units, of which 273 or over **70%**, were “green” (flex fuel, hybrid, electric, natural gas, CNG or equipped with DPFs or engine heaters), well exceeding our target of 25%. The majority of the green elements were flex fuel police cruisers and trucks equipped with DPFs.
  - **Target: 75% by end of 2010**
    - **2009 year-end update:** In 2009, the City purchased 122 new on-road vehicles/equipment. Of these, 51, or almost **42%**, were considered “green”.
    - **2010 year-end update:** In 2010, the City purchased 210 new on-road vehicles. Of these, 88, or **42%**, are considered “green”. The original target of 75% assumed the purchase of a large quantity of flex fuel police cruisers. Due to budget constraints over the past three years, the needed number of cruisers has not been purchased, thus affecting our ability to meet our target.



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- **Measure:** Off-road equipment that is “greened”
  - **Target: All new off-road equipment will be non-petroleum, if a non-petroleum version is available and proven to meet operational needs, by end of 2008**
    - **2010 year-end update:** In total for the three (3) year period, 1% of off-road purchased were considered green. Non-petroleum versions of most off-road equipment are still largely unavailable, making large amounts of purchases difficult.
  - **Target: All existing off-road diesel equipment will be fueled on biodiesel**
    - **2010 year-end update:** Approximately **56,470** gallons of biodiesel fuel were used in off-road units in 2010- representing approximately **85%** of all diesel fuel used in off-road units. Some off-road units are still fueling

with regular diesel because their fuel station has not yet been switched to biodiesel.

- **Target: All new portable fueling containers will be low vapor leak.**
  - **2010 year-end update:** Fleet has used its consumer panel meetings to emphasize that divisions should only be purchasing low vapor leak fueling containers.
- **Measure:** Percentage of City employees who drive City vehicles that have completed a green driver education course.
  - **Target: 100% by end of 2009**
    - **2010 year-end update:** An on-line option has been researched by Fleet Management that could be implemented by HR in the future.



## Section 5: Action Plan Strategies

In order to accomplish the goals outlined above, the City shall modify procurement procedures, implement policies, conduct reviews and take other actions as outlined in the sections below, with a focus on:

- 1) Operating cleaner vehicles (cleaner fuels and cleaner engine operation)
- 2) Operating vehicles more efficiently (more efficient vehicle types and more efficient use of vehicles that result in fuel savings)

### (1) Cleaner Vehicles - *Strategies to achieve cleaner operating vehicles:*

- **Technology: Diesel truck retrofits-** Retrofitting diesel vehicles with emission control devices will reduce particulate emissions by 30 to 90%, depending on the device used. Grants have been sought that would allow the city to install diesel oxidation catalysts (DOCs) as well as diesel particulate filters (DPFs) on diesel on-road vehicles. A DOC is a device with a honeycomb-like structure that oxidizes pollutants in the exhaust stream, thereby reducing harmful emissions. Diesel vehicles considered “eligible” for DOCs have pre-2002 engines and must have exhaust systems in good enough condition to accommodate the DOC, and will typically be kept in the fleet for at least 3 more years. A DPF is a ceramic device that collects the particulate matter in the exhaust stream and breaks it down into less harmful components. DPFs reduce emissions of particulate matter by 60-90%. DPFs will be reserved for higher use vehicles that will remain the fleet for at least 4-5 more years and that typically have a higher dollar value. In order to be eligible for a DPF, the vehicle must have an electronically controlled engine that accommodates a DPF.

*Recommended action: Conduct analysis of all City diesel vehicles to determine number eligible for retrofit and complete retrofits of all targeted vehicles; following evaluation of results, conduct pilot of off-road vehicles to determine if retrofits are beneficial for off-road vehicles as well.*

*2010 year-end update: An analysis was conducted of all pre-2002 city on-road diesel vehicles to determine which vehicles were candidates for retrofits. Fleet Management developed an initial list and then met with all affected divisions to finalize the vehicles that would be eligible for either a DOC or DPF. The final number was a total of 115 diesel vehicles. All 115 vehicles have now been retrofitted with either a DOC or DPF. A total of 107 DOCs and eight (8) DPFs were installed using federal grants. A federal EPA grant funded the purchase and installation of seven DOCs in 2008. A larger grant, the Congestion, Mitigation and Air Quality grant (CMAQ), funded the remaining 108 retrofits in 2009 and 2010. This project is now complete.*

- **Alternative fueled vehicles.** Alternative fueled vehicles (AFV) operate on fuels other than petroleum-based gasoline and diesel.

**Biodiesel:** Biodiesel is a clean, renewable fuel, made by refining any fat or oil such as soybean oil. It behaves and performs much like petroleum diesel but is biodegradable and nontoxic. It's typically blended with petroleum diesel to create a biodiesel blend. Fleet Management conducted two successful bio-diesel pilot programs beginning in December 2006 through early 2007. Two refuse collection vehicles operated using B5 (a blend of 5% biofuel and 95% diesel) and the Sewerage & Drainage compost facility has been using B20 (a blend of 20% biofuel and 80% diesel) in front loaders. The use of biodiesel was expanded citywide in 2007 to include all Refuse fueling locations. Fleet will work with other city divisions to provide information and education on biodiesel fuel and expand the usage to all divisions in 2008. The goal is to switch most of the City's diesel fuel purchases to B20 by mid 2008. If successful, all city diesel vehicles will operate on B20 until early November and then will switch to B5 until early March and then will switch back to B20 for the warmer months.

*Recommended action: Expand current efforts to switch all diesel fleet, including off-road diesel vehicles and equipment, to B5 during cold weather months and B20 or greater during warm weather months by the end of 2008. Consider use of B20 year round in situations where fuel is stored underground and vehicles are stored indoors.*

**2010 year-end update:** In 2010, 68.1% of all bulk diesel purchases were biodiesel.

*In 2009, the City exceeded its target of purchasing 50% of all bulk diesel purchases as biodiesel by purchasing 764,311 gallons of biodiesel, accounting for 62% of all 2009 bulk diesel purchases.*

**CNG (Compressed Natural Gas):** Compressed Natural Gas (CNG) vehicles emit fewer nitrogen oxides and less particulate matter than gas powered vehicles. CNG typically costs between 25-50% less per mile of operation than gasoline or diesel.

Language was added to the city's 2008 light duty vehicle UTC specifications that listed CNG capability, among other "environmentally preferable" features, as a preferred option. Fleet Management has been working with both the Refuse Collection and Transportation Divisions on specifying CNG vehicles for bid in 2007. Refuse has one CNG rear loader on order and scheduled for delivery in first quarter 2008. Transportation added CNG as an option in their specifications for street sweepers but currently has nothing on order.

The main impediment to the operation of CNG vehicles is the lack of fueling locations. Currently, the City does not operate any CNG fueling locations; however, the County currently operates a fuel site located off Alum Creek Drive that the City is able to access, and additional CNG stations are expected to be constructed in Franklin County in the near future.

*Recommended action: Expand current efforts: Pursue additional grant funding opportunities to assist in CNG purchases as well as building of CNG*

*fueling stations. Consider CNG across a wide range of light, medium and heavy duty applications where practical.*

***2010 year-end update:** The City's first CNG Refuse rear loader was put into service during the first quarter of 2009. The City's current CMAQ grant is being used to purchase nine additional CNG Refuse and five other heavy duty vehicles in 2010. Legislation was recently completed to award the bids for these vehicles. Fleet Management has also been awarded funding through the Department of Energy (DOE) Clean Cities grant to purchase an additional six CNG heavy duty trucks in 2010 and 2011, and construct a fast-fill CNG fueling station at the Fleet Facility on Groves Road. Fleet is currently in contract for the design of the station and it is expected to be operational by the fall of 2011.*

*In 2010, the City's one Refuse truck used 3701 gges (gasoline gallon equivalents) of CNG fuel, saving approximately \$3,590 over the average cost of diesel in 2010.*

**Flex fuel:** Flexible fuel vehicles offer drivers a choice of fuels. They can either use standard unleaded gasoline or E85, a blend of 15% gasoline and 85% ethanol. Flex fuel vehicles cost no more than gas-only vehicles, and E85 is usually less expensive to purchase at the pump. E85 comes from renewable, American resources like corn. The City currently owns approximately 94 flex fuel vehicles, 30 Chevrolet Impalas and 62 Ford Crown Victorias, located in the Police division, and two station wagons located in the Fleet vehicle pool. An additional 109 flex fuel Crown Victorias are on order and due to arrive in spring of 2008.

City fueling locations are not currently equipped to dispense E85; however, there are various E-85 retail locations located throughout the area. In addition to purchasing retail, Franklin County has an E85 refueling station off Alum Creek Drive that they have offered to make available to the City flex fuel fleet.

Language was added to the City's 2008 light duty vehicle UTC specifications that listed flex fuel capability, among other "environmentally preferable" features, as a preferred option.

*Recommended actions: Expand current efforts. Make flex fuel vehicles available on current City UTCs and encourage the purchase of flex fuel vehicles through the procurement process (see below). Provide an information sheet with each new flex fuel vehicle to educate drivers about the benefits of E85 and list the retail fuel locations where E85 can be purchased, as well as the County location on Alum Creek Drive.*

***2010 year-end update:** Flex fuel vehicles were listed as a "preferred option", along with hybrids and CNG, on the 2010 and 2011 City UTCs for light vehicles. The City currently owns approximately **315** flex fuel vehicles, which used 3566 gallons of E-85 in 2010 out of 2,143,920 gallons of total unleaded*

*fuel used in 2010. The fuel sites at Fairwood Avenue and 910 Dublin Road are being updated to include the first City-owned E85 fuel dispensers. These sites are expected to have E85 available in 2011.*

**Procurement practices.** One of the policy strategies outlined in the Mayor's Green Memo states: "Purchase better performing vehicles by assuring that as we get bids for new on-road and off-road vehicles, we seek vehicles that are fuel efficient and reduce emissions, and that we evaluate and pursue vehicles that operate on alternative or renewable fuel sources, when possible and practical." Green language that gives preference to hybrids, flex fuel vehicles and CNG vehicles was included as part of the 2009 light duty vehicle UTC specifications. This "environmentally preferable purchasing" language gives preference to environmentally preferable bidders.

*Recommended actions: Implement procurement policies and practices to advance the City's green efforts including:*

- *Include a minimum efficiency standard in miles per gallon for each vehicle class for which the City has procurement specifications and include such a standard in any new vehicle procurement specification.*
- *Review all vehicle/equipment specifications and modify as necessary to ensure that:*
  - *The most fuel efficient vehicles possible are being purchased*
  - *The bid specifications are written in a manner flexible enough to allow the purchase of alternative fuel or hybrid vehicles when possible*
  - *Specifications for off-road equipment/vehicles are also written in a way that favors green options when available*
- *Require all passenger vehicles and light duty trucks that are purchased be rated as ultra-low emission or zero emission vehicles, when this option is available.*

*2010 year-end update: Fleet Management meets with all divisions to review vehicle replacement requests and ensure that vehicles are "right-sized" for the intended use and that the most fuel efficient vehicles possible are being purchased. As vehicle specifications come to Fleet, they are examined and green elements are added where practical. Fleet Management implemented a citywide replacement plan and has developed purchasing guidelines for divisions to dispose of the oldest units first. The 2011 light duty vehicle specifications give preference to alternative fueled vehicles (flex fuel, CNG, hybrid, etc.).*

## **(2) Increased efficiency- more efficient vehicles and more efficient use of vehicles - Strategies to achieve increased efficiency:**

- **Driver behavior.** Fleet Management developed a pamphlet on fuel conservation and emissions reduction that was distributed citywide in May

2006. It addresses driver behavior that will help conserve fuel and save money. In addition to the driver pamphlet, Fleet Management developed an anti-idling policy for all city vehicles which was distributed citywide in 2006.

The Citywide Office of Training and Development currently offers a class on defensive driving. It is not mandatory.

*Recommended actions: Develop an employee education program designed to achieve the Green Fleet action plan goals and make it mandatory for drivers of city vehicles. Topics could include fuel usage/conservation, maintenance, using alternatives to driving, defensive driving, and education on fleet-related citywide policies (i.e. anti-idling). Target date to have education program implemented: April 1, 2008.*

*2010 year-end update: A green driving course has been identified and a recommendation for an on-line course selected. The course will need to be implemented through Human Resources citywide training program.*

- **Vehicle Pool.** Fleet Management implemented a pilot vehicle pool in 2007 using underutilized vehicles located in the downtown area. The pool is currently comprised of 11 vehicles, with a rental contract (Enterprise) in place if needed. The objective of the pool is to better utilize city vehicles, reduce maintenance and fuel costs, as well as increase vehicle efficiency and the use of maintenance facilities. The ultimate goal of the pool is to reduce the overall fleet size through better utilization of City vehicles.

*Recommended actions: Continue to expand the size of the vehicle pool and increase marketing efforts to increase usage. Fleet should pursue the purchase of hybrid vehicles to use in the pool, which would offer both vehicles for the pool as well as the opportunity to study and evaluate hybrid technology. Other advanced technology vehicles should also be considered for the pool including plug-in hybrids and low speed dedicated electric vehicles (GEMs) for short distances.*

*2010 year-end update: Fleet Management has greatly reduced the size of the vehicle pool in order to utilize rental vehicles. Utilizing rental vehicles has proven to be more cost effective than maintaining a pool of City vehicles. Our maintenance costs have been reduced and we are able to utilize more fuel efficient vehicles from the rental vendor. The vehicle pool is currently comprised of four City vehicles, down from the original eleven (11), which has allowed the disposal of seven underutilized vehicles. The pool is currently averaging approximately 44 rentals per month.*

- **Hybrid vehicles.** One of the most effective ways to increase the fleet's average fuel economy is the use of hybrid electric vehicles, which combine a highly efficient gas engine with an advanced electric motor. Hybrids are



designed to recover energy during braking and gearing down and store it in the battery pack. Hybrids can achieve up to twice the energy efficiency compared with a conventional vehicle. The City currently owns 2 hybrid vehicles, located in the Department of Public Utilities. Green language that gave preference to hybrids was included as part of the 2008 light duty vehicle UTC specifications, however no bids for hybrids were received.

*Recommended actions: A separate hybrid bid should be considered in early 2008. Other advanced technology options should be explored, including plug-in hybrids and the possibility of adding heavy duty hybrids to the fleet.*

*2010 year-end update: The City currently owns a total of five (5) hybrid vehicles. Two of the vehicles are Ford hybrid Escapes and the other three are Fusion hybrids for meter readers. Through the DOE Clean Cities grant, the City was awarded funding for five (5) hybrid heavy duty vehicles. These will be purchased in 2011.*

- **Reduce vehicle idling.** Unnecessary idling wastes fuel and increases emissions. Idling for one hour equates to approximately 33 miles of engine wear on a standard automobile. Columbus has taken several steps to reduce unnecessary idling, including developing and implementing a citywide anti-idling policy that went into effect as a Mayor's Executive Order in December 2005. In addition, all new Refuse trucks have an automatic shut-off when the vehicle idles for more than ten minutes without moving. Hydraulic oil and engine coolant heaters have been installed in five refuse collection trucks which will reduce engine idling during periods of extreme cold. Fifteen new trucks received in 2006 came equipped with similar units and an additional 5 trucks came equipped with the units in 2007. Grant funds will be used to install hydraulic heaters on an additional 21 Refuse trucks located at the Morse Road station.

*Recommended actions: Continue with current efforts and expand efforts to include analyzing fleet to determine number of additional vehicles eligible for hydraulic oil and engine coolant heater installation and complete installation of all targeted vehicles by action plan target date. Launch employee education program (referenced above) to educate employees about anti-idling policy. Consider installing anti-idling signs at City fleet facilities and parking lots.*

*2010 year-end update: All identified eligible city vehicles have received either an engine or hydraulic heater as of year-end 2010. A total of 43 vehicles were fitted with either hydraulic or engine heaters, all through various federal funds. Prior to the installation of the heaters, Refuse trucks at Morse Road would need to be started up to 4 hours early on extremely cold days so that they would be warm by the time the driver began the route. This resulted in idling of up to 4 hours per vehicle and having to pay an employee overtime*

*to come in early to start the vehicles. The installation of the heaters has eliminated the need to idle the vehicles to warm them, which has reduced fuel use, reduced emissions and saved on overtime.*

- **“Right-sizing” vehicles.** Ensuring that the duty requirements of a vehicle match the smallest possible vehicle for the task is an effective fuel saving strategy. Fleet Management currently meets with every division to discuss vehicle purchase requests for the year. During this meeting, justifications for purchase requests are required from divisions, including intended use of the vehicle requested. Fleet Management will often recommend a smaller, alternate vehicle that better aligns with the vehicle’s intended use.

*Recommended actions: Review every new vehicle purchase request and modify them as necessary to ensure that the vehicle class to which the requesting vehicle belongs is appropriate for the duty requirements that the vehicle will be called upon to perform. Consider creating formal guidelines for divisions.*

**2010 year-end update:** *In conjunction with City agencies, Fleet Management reviews all purchases for the purpose of reducing engine size, reducing our carbon footprint and fitting the application to the size of the vehicle. Through right-sizing, over 100 4-cylinder vehicles were purchased in 2009-10 – units that would have traditionally been purchased with at least V-6 engines in the past or are replacing vehicles with at least V-6 engines.*

## **Section 6: Monitoring of the Green Fleet Action plan**

In order to ensure compliance and track progress of the goals outlined in Section 4 above, as well as to monitor the actions outlined in Section 5, some type of oversight process should be implemented. A Green Fleet committee, comprised of representatives from various City divisions, is one option. Another option would be to use a special session of Columbus Stat to review action plan progress once a year, more often if necessary. All department/division fleet coordinators should submit a Green Fleet report to the committee/panel detailing their progress in achieving the goals of the Green Fleet program. The committee/panel should meet at least once a year to review these reports and assess the overall progress of the Green Fleet program. Action plan goals and timelines should be reviewed at least annually so that targets and/or timelines can be re-evaluated and adjusted if needed.

This committee should be given the authority to reward the division that demonstrates the best compliance with the Green Fleet mission. Incentives should be developed that reward the division head and/or appropriate staff.

In addition to tracking the progress of the action plan, data should be collected regarding the various initiatives set forth in the plan. Costs and benefits should be calculated over the life cycles of the various vehicles. Initial purchase costs should be recorded and then fuel and maintenance costs tracked for the life of each vehicle purchased under this action plan. This type of data would aid the City in making life cycle assessments over time. The City should attempt to estimate and assess possible “hidden” costs and savings that accrue over time from the action plan.

*2010 year-end update: Plan compliance and progress is tracked by Fleet Management’s “green team”.*